

# SEQUENCE LISTING

<110> Thomas Buehler, Reto Andreas Gadiant, Reinhard Korn, Rao Movva  
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 <170> PatentIn version 3.0  
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| Asp Gln Val Ile Ile Leu Tyr Ser Gly Asp Lys Ile Tyr Asp Asp Tyr    |      |
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| Ser Gly Asp Ala Ser Ile Asn Val Thr Asn Leu Gln Leu Ser Asp Ile    |      |
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| ggc aca tat cag tgc aaa gtg aaa aag gct cct ggt gtt gga aat aag    | 3621 |
| Gly Thr Tyr Gln Cys Lys Val Lys Lys Ala Pro Gly Val Gly Asn Lys    |      |
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| Lys Ile Gln Leu Thr Val Leu Leu Lys Pro Ser Gly Thr Arg Cys Tyr    |      |
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| Val Asp Gly Ser Glu Glu Ile Gly Asn Asp Phe Lys Leu Lys Cys Glu    |      |
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| Pro Lys Glu Gly Ser Leu Pro Leu Leu Tyr Glu Trp Gln Lys Leu Ser    |      |
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| Asn Ser Gln Lys Leu Pro Thr Leu Trp Leu Ala Glu Met Thr Ser Pro    |      |
| 180 185 190 195  |      |
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| Val Ile Ser Val Lys Asn Ala Ser Thr Glu Tyr Ser Gly Thr Tyr Ser    |      |



Ser Asp Ile Gly Thr Tyr Gln Cys Lys Val Lys Lys Ala Pro Gly Val  
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Gly Asn Lys Lys Ile Gln Leu Thr Val Leu Leu Lys Pro Ser Gly Thr  
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Arg Cys Tyr Val Asp Gly Ser Glu Glu Ile Gly Asn Asp Phe Lys Leu  
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Lys Cys Glu Pro Lys Glu Gly Ser Leu Pro Leu Leu Tyr Glu Trp Gln  
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Lys Leu Ser Asn Ser Gln Lys Leu Pro Thr Leu Trp Leu Ala Glu Met  
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acc aga agt ttg agt atc act act cct gaa cag atg att gaa aag gcc 96  
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| gac<br>Asp        | cag<br>Gln<br>50  | ggg<br>Gly        | ccg<br>Pro        | ctg<br>Leu        | gac<br>Asp        | atc<br>Ile<br>55  | gag<br>Glu        | tgg<br>Trp        | ctg<br>Leu        | ctg<br>Leu        | tca<br>Ser<br>60  | cca<br>Pro        | gct<br>Ala | gat<br>Asp        | aat<br>Asn        | 192 |
| cag<br>Gln<br>65  | aag<br>Lys        | gtg<br>Val        | gat<br>Asp        | caa<br>Gln<br>70  | gtg<br>Val<br>70  | att<br>Ile        | att<br>Ile        | tta<br>Leu        | tat<br>Tyr        | tct<br>Ser<br>75  | gga<br>Gly        | gac<br>Asp        | aaa<br>Lys | att<br>Ile        | tat<br>Tyr<br>80  | 240 |
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| gat<br>Asp        | ctc<br>Leu        | aaa<br>Lys        | tca<br>Ser<br>100 | ggt<br>Gly        | gat<br>Asp        | gca<br>Ala        | tca<br>Ser        | ata<br>Ile<br>105 | aat<br>Asn        | gta<br>Val        | aca<br>Thr        | aat<br>Asn<br>110 | cta<br>Leu | cag<br>Gln        | ttg<br>Leu        | 336 |
| tca<br>Ser        | gat<br>Asp        | att<br>Ile<br>115 | ggc<br>Gly        | aca<br>Thr        | tat<br>Tyr        | cag<br>Gln        | tgc<br>Cys<br>120 | aaa<br>Lys        | gtg<br>Val        | aaa<br>Lys        | aag<br>Lys        | gct<br>Ala<br>125 | cct<br>Pro | ggt<br>Gly        | gtt<br>Val        | 384 |
| gga<br>Gly        | aat<br>Asn<br>130 | aag<br>Lys        | aag<br>Lys        | att<br>Ile        | cag<br>Gln        | ctg<br>Leu<br>135 | aca<br>Thr        | gtt<br>Val        | ctt<br>Leu        | ctt<br>Leu        | aag<br>Lys<br>140 | cct<br>Pro        | tca<br>Ser | ggt<br>Gly        | aca<br>Thr        | 432 |
| aga<br>Arg<br>145 | tgt<br>Cys        | tat<br>Tyr        | gtt<br>Val        | gat<br>Asp<br>150 | gga<br>Gly        | tca<br>Ser        | gaa<br>Glu        | gaa<br>Glu        | att<br>Ile        | gga<br>Gly<br>155 | aat<br>Asn        | gac<br>Asp        | ttt<br>Phe | aaa<br>Lys        | cta<br>Leu<br>160 | 480 |
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| aca<br>Thr        | tac<br>Tyr<br>210 | agc<br>Ser        | tgt<br>Cys        | acc<br>Thr        | gtg<br>Val        | aaa<br>Lys<br>215 | aac<br>Asn        | aga<br>Arg        | gtg<br>Val        | ggc<br>Gly        | tct<br>Ser<br>220 | gat<br>Asp        | cag<br>Gln | tgc<br>Cys        | ctg<br>Leu        | 672 |
| ctt<br>Leu<br>225 | cgc<br>Arg        | ctg<br>Leu        | gat<br>Asp        | gtg<br>Val        | gtt<br>Val<br>230 | cct<br>Pro        | cct<br>Pro        | tca<br>Ser        | aat<br>Asn        | aga<br>Arg<br>235 | gct<br>Ala        | gga<br>Gly        | aca<br>Thr | att<br>Ile        | gca<br>Ala<br>240 | 720 |
| gga<br>Gly        | gct<br>Ala        | gtt<br>Val        | ata<br>Ile        | gga<br>Gly<br>245 | gtt<br>Val        | ttg<br>Leu        | ctt<br>Leu        | gct<br>Ala        | cta<br>Leu<br>250 | gtg<br>Val        | ctc<br>Leu        | att<br>Ile        | ggt<br>Gly | ctt<br>Leu<br>255 | att<br>Ile        | 768 |
| gtg<br>Val        | ttt<br>Phe        | tgc<br>Cys        | tgt<br>Cys<br>260 | cat<br>His        | aaa<br>Lys        | aag<br>Lys        | cgc<br>Arg        | aga<br>Arg<br>265 | gaa<br>Glu        | gaa<br>Glu        | aaa<br>Lys        | tac<br>Tyr<br>270 | gaa<br>Glu | aaa<br>Lys        | gaa<br>Glu        | 816 |
| gtg               | cat               | cat               | gat               | atc               | agg               | gaa               | gac               | gtg               | cct               | cct               | ccg               | aag               | agc        | aga               | acg               | 864 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
| Val | His | His | Asp | Ile | Arg | Glu | Asp | Val | Pro | Pro | Pro | Lys | Ser | Arg | Thr |      |  |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |      |  |
| tcc | act | gcc | aga | agc | tac | ctc | ggc | agc | aac | cac | tcg | tcc | ctg | gga | tcc | 912  |  |
| Ser | Thr | Ala | Arg | Ser | Tyr | Leu | Gly | Ser | Asn | His | Ser | Ser | Leu | Gly | Ser |      |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |      |  |
| atg | tct | cct | tcc | aac | atg | gaa | ggc | tat | tcc | aag | act | cag | tat | aac | cag | 960  |  |
| Met | Ser | Pro | Ser | Asn | Met | Glu | Gly | Tyr | Ser | Lys | Thr | Gln | Tyr | Asn | Gln |      |  |
|     | 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |      |  |
| gta | cca | agc | gaa | gac | ttt | gaa | cgc | gct | cct | cag | agt | cca | act | ctc | ccg | 1008 |  |
| Val | Pro | Ser | Glu | Asp | Phe | Glu | Arg | Ala | Pro | Gln | Ser | Pro | Thr | Leu | Pro |      |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |      |  |
| ctc | gct | aag | gta | gct | gcc | cct | aat | ctc | agc | cgg | atg | gga | gcg | gtg | cct | 1056 |  |
| Leu | Ala | Lys | Val | Ala | Ala | Pro | Asn | Leu | Ser | Arg | Met | Gly | Ala | Val | Pro |      |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |      |  |
| gtg | atg | att | cca | gcc | cag | agc | aag | gac | ggg | tcc | ata | gta | taa |     |     | 1098 |  |
| Val | Met | Ile | Pro | Ala | Gln | Ser | Lys | Asp | Gly | Ser | Ile | Val |     |     |     |      |  |
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| Met | Ala | Leu | Leu | Leu | Cys | Phe | Val | Leu | Leu | Cys | Gly | Val | Ala | Asp | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Ser | Leu | Ser | Ile | Thr | Thr | Pro | Glu | Gln | Met | Ile | Glu | Lys | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Glu | Thr | Ala | Tyr | Leu | Pro | Cys | Arg | Phe | Thr | Leu | Gly | Pro | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gln | Gly | Pro | Leu | Asp | Ile | Glu | Trp | Leu | Leu | Ser | Pro | Ala | Asp | Asn |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Lys | Val | Asp | Gln | Val | Ile | Ile | Leu | Tyr | Ser | Gly | Asp | Lys | Ile | Tyr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asp | Tyr | Tyr | Gln | Asp | Leu | Lys | Gly | Arg | Val | His | Phe | Thr | Ser | Asn |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Lys | Ser | Gly | Asp | Ala | Ser | Ile | Asn | Val | Thr | Asn | Leu | Gln | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Ile | Gly | Thr | Tyr | Gln | Cys | Lys | Val | Lys | Lys | Ala | Pro | Gly | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

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Gly Asn Lys Lys Ile Gln Leu Thr Val Leu Leu Lys Pro Ser Gly Thr  
130 135 140

Arg Cys Tyr Val Asp Gly Ser Glu Glu Ile Gly Asn Asp Phe Lys Leu  
145 150 155 160

Lys Cys Glu Pro Lys Glu Gly Ser Leu Pro Leu Leu Tyr Glu Trp Gln  
165 170 175

Lys Leu Ser Asn Ser Gln Lys Leu Pro Thr Leu Trp Leu Ala Glu Met  
180 185 190

Thr Ser Pro Val Ile Ser Val Lys Asn Ala Ser Thr Glu Tyr Ser Gly  
195 200 205

Thr Tyr Ser Cys Thr Val Lys Asn Arg Val Gly Ser Asp Gln Cys Leu  
210 215 220

Leu Arg Leu Asp Val Val Pro Pro Ser Asn Arg Ala Gly Thr Ile Ala  
225 230 235 240

Gly Ala Val Ile Gly Val Leu Leu Ala Leu Val Leu Ile Gly Leu Ile  
245 250 255

Val Phe Cys Cys His Lys Lys Arg Arg Glu Glu Lys Tyr Glu Lys Glu  
260 265 270

Val His His Asp Ile Arg Glu Asp Val Pro Pro Pro Lys Ser Arg Thr  
275 280 285

Ser Thr Ala Arg Ser Tyr Leu Gly Ser Asn His Ser Ser Leu Gly Ser  
290 295 300

Met Ser Pro Ser Asn Met Glu Gly Tyr Ser Lys Thr Gln Tyr Asn Gln  
305 310 315 320

Val Pro Ser Glu Asp Phe Glu Arg Ala Pro Gln Ser Pro Thr Leu Pro  
325 330 335

Leu Ala Lys Val Ala Ala Pro Asn Leu Ser Arg Met Gly Ala Val Pro  
340 345 350

Val Met Ile Pro Ala Gln Ser Lys Asp Gly Ser Ile Val  
355 360 365